portant diamond mine in South Africa is that of Jagersfontein, situated in the Orange Free State, about eighty miles to the south-east of Kimberley.

The diamond mines of South Africa are not less remarkable for the size of the individual stones that they have yielded, than for the vast amount of the precious material with which they have flooded the markets of the world. The "Braganza" diamond, which belonged to the Emperor of Brazil, is said to weigh 1680 carats, but it has never been subjected to the inspection of experts, and there is every reason to believe that it is nothing but a colourless topaz. In the same way the reputed diamond of the Rajah of Matan in Borneo (367 carats) has been recently shown to be only a piece of quartz. The "Great Mogul," the Regent or Pitt diamond, and the Koh-i-nûr, the finest productions of the Indian mines, are said to have originally weighed $787\frac{1}{2}$, 410, and 193 carats respectively, but were reduced by cutting to $279\frac{7}{16}$, $136\frac{7}{8}$, and $102\frac{3}{4}$ carats. The Brazilian mines have yielded the Portuguese Regent and the Star of the South, the former of which, on cutting, yielding a gem of 215 carats, while the latter weighed $254\frac{1}{2}$ carats in the rough.

The South African mines have, however, produced stones surpassing in size all those hitherto obtained either from India or Brazil. Some of these stones are, it is true, of a yellow colour, and therefore of comparatively small value; but others, like the Porter-Rhodes diamond (150 carats), the De Beers diamond ($428\frac{1}{2}$ carats), and the Jagersfontein diamond ($969\frac{1}{2}$ carats)—the last-mentioned having been discovered as recently as June 30, 1893—are remarkable for their freedom from any trace of yellow tint, and for the perfect whiteness or even blue-whiteness of their colour. We are able to give outlines drawn to the true scale of the two largest South African diamonds, the one characterised by its crystalline form (a regular octahedron), the other by its irregularity of shape. These are taken from Mr. Reunert's book.

Another book on precious stones that has recently appeared is of a very different character, and deals not only with the diamond, but with all the other materials held in esteem by jewellers.[1] The two works are, however, equally entitled to praise for the accuracy and fulness of the information they supply, and for the manner in which the latest sources of information have been utilised.

The distinguishing feature of Dr. Doelter's book upon precious and ornamental stones is the care which has been bestowed upon the directions for their easy and certain discrimination. In the earlier chapters, the descriptions of the various methods for determining and accurately defining the specific gravity, cleavage, hardness, refractive index and double refraction, as well as the colour, pleochroism, and absorption of minerals, are very full and entirely satisfactory. The second part of the work contains systematic descriptions of the minerals employed for purposes of ornament; and these, as might be expected from a mineralogist of Dr. Doelter's position, leave nothing to be desired in the way of completeness and accuracy. No less admirable are the accounts given of the artificial production of these minerals, of the materials made to imitate them, and of the value of gems and the modes of cutting them. Details of this kind are of much practical value, and add greatly to the usefulness of the book as a work of reference. The position of certain minerals in the estimation of jewellers is liable to variation as the popular taste changes, and it is certainly not the same in different countries. Dr. Doelter's classification will, however, we think be generally accepted as a judicious one. Of precious stones proper he admits three classes, in the highest of which he places only the diamond, the various forms of corundum, the emerald, and the spinel, though possible exception may be taken to the high position allowed to the last of these. The second-class contains euclase, chrysoberyll, zircon, phenacite, topaz, the noble opal, garnet and tourmaline. To the third class are relegated the turquoise, olivine, cordierite, kyanite, andalusite, staurolite, hiddenite, axinite, vesuvian, and diopside. The "semi-noble stones" fall into two classes, in the higher of which are placed quartz, chalcedony, agate, felspars, lapis lazuli, and rhodonite, while the lower contains amber, fluorspar, nephrite, agalmatolite, malachite, and serpentine. It is doubtful whether some of the forms of quartz, like amethyst and cat's-eye, are not deserving of a place among the noble stones proper.

The third part of the work contains a series of tables for the determination of the minerals which are employed as precious stones. These tables have been drawn up with great care, and cannot fail to prove of very great service to those studying gems and similar materials, either from the scientific or the commercial point of view. The table showing the trade names, and the scientific designations of the several gems, is very complete; and the whole work may be commended for its union of scientific accuracy with practical usefulness.

NOTES.

The International Sanitary Conference, which was to have opened at Paris on January 24, has been postponed to February 7. We learn that President Cleveland has appointed Dr. Edward S. Shakespeare, of Philadelphia, Dr. Stephen Smith, of New York, and Dr. Preston H. Bailhache, of the United States Marine Hospital Service, delegates to represent the United States at the Congress.

A slight earthquake visited North Devon about 9 a.m. on Tuesday, January 23. The shock seems to have been felt over the whole of Exmoor as far as South Molton.

We regret to note the death of Prof. A. Hirsch; he died at Berlin on January 28, at the age of seventy-six. We have also to announce the death of Dr. G. Adler, Professor of Mathematical Physics in Vienna University.

Dr. K. von Zittel, Professor of Geology in Munich University, has been made a member of the German Privy Council.

At a public meeting held at Shrewsbury on Tuesday, it was resolved to raise a memorial to Charles Darwin, who was a native of that town. Another public meeting will be held to consider the best method of carrying out the proposal. The Mayor of Shrewsbury, in commenting upon the proposal, rightly remarked that in doing honour to one who had shed an imperishable lustre on his native town they were doing honour to themselves. In addition to the suggestion that a bronze statue of Darwin should be erected in front of the old Grammar School, now the public library and museum, it was proposed to found a scholarship to his memory in connection with Shrewsbury School. Another suggestion was that the memorial should take the form of a hall of science to be erected in Shrewsbury for the purposes of scientific and technical instruction.

It is reported that a sum approaching £50,000 has been bequeathed by the late Mr. T. H. Adam, of Newport, for the purposes of technical instruction. The money is to be devoted to teaching practical and theoretical agriculture to men and youths, and a knowledge of dairying, housekeeping, and other subjects to women and girls, either by means of lectures or the establishment of a school or schools of agriculture at Edgmond or Woodseaves, in Shropshire, or Chadwell, in Staffordshire, or elsewhere; or by such other means as the trustees shall think fit.

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[1] "Edelsteinkunde: Bestimmung und Unterscheidung der Edelsteine und Schmucksteine. Die Künustliche Darstellung der Edelsteine." Von Dr. C. Doelter, o ö Prof. der Mineralogie an der K.K. Universität Graz. (Leipzig: Ve and Co., 1893.)

THROUGH the liberality of Mr. J. H. Veitch (says the *Kew Bulletin*), the Museum of the Royal Gardens at Kew has recently been enriched by the whole of the fine and extensive collection of vegetable products made by him during his recent travels in Japan. The collection is not only very extensive, but it is also very varied, and contains many things quite new to the Museum.

THE Rev. C. W. Langmore sends us a description of a fine lunar rainbow observed by him at Bracknell, Berks, about nine o'clock on the evening of Wednesday, January 17. At a distance of about four or five times the moon's apparent diameter a circle of brilliant white was seen. This was surrounded by a broad band of brown-orange of several gradations. Next came a narrow band of violet, followed by a broader band of green, and a narrower one of yellow. The whole series was encircled by a broad band of brown-orange.

A MEETING was held at the Society of Arts on Friday last for the purpose of formally constituting an Association of Technical Institutions. Representatives of almost every technical institution in the country attended the meeting. Principal F. G. Ogilvie, Edinburgh, presided, and it was agreed that the objects of the association should be (*a*) to provide a medium for the interchange of ideas amongst its members; (*b*) to influence, by combined action, where desirable, Parliament, County Councils, and other bodies concerned in promoting technical education; and (*c*) to promote the efficient organisation and management of technical institutions, and to facilitate concordant action among governing bodies, and aid the development of technical education throughout the United Kingdom. The council and officers of the association were elected, and a Parliamentary committee was appointed to take such steps as may be necessary to secure due representation for technical schools on the Commission for dealing with secondary education, and to watch the progress of legislation affecting such schools.

THE twenty-first annual dinner of old students of the Royal School of Mines was held on Monday. More than 150 guests were present, among them being Profs. W. C. Roberts Austen, Le Neve Foster, T. E. Thorpe, A. W. Rücker, and G. B. Howes, Sir H. Trueman Wood, Sir Lowthian Bell, Captain Abney, Mr. Bennett H. Brough, Mr. W. Topley, Mr. P. C. Gilchrist, Mr. R. D. Oldham, Dr. E. J. Ball, and Dr. Wynne.

THE weather has recently been very unsettled over the British Islands, owing to the influence of a succession of great atmospheric disturbances passing from the Atlantic to the northward of Scotland; strong gales have occurred in some parts daily for more than a week, accompanied at times with thunderstorms and snow or hail. During the latter part of last week reports from the Azores showed that the barometer there was two inches higher than in Scandinavia, and the steel barometric gradients over this country caused the wind to blow with the force of 10 of the Beaufort scale (0–12) in the north and west, both on Saturday and Monday. Although rain has fallen every day, the amount has only been heavy in exceptional cases; an inch and upwards in twenty-four hours was measured both in the north and south towards the close of the week. In the north of Scotland the fall for the week ended January 27 was much above the average.

DR. J. HANN has just communicated to the Academy of Sciences at Vienna a paper entitled "Contribution to the daily range of the meteorological elements in the higher strata of the atmosphere," containing (1) the calculation of the two-hourly observations of all the meterorological elements on the summit of the Ontake in Japan (10,023 feet), from August 1 to September 12, 1891, and at two base stations, with a thorough investigation of the results by harmonic analysis, by which means some interesting differences in the daily range are exhibited between the upper and lower stations; (2) the calculation and discussion of the observations made by self-recording instruments established by M. J. Vallot on Mont Blanc (15,770 feet), from July to September, 1887, together with observations at Grand Mulets (9875 feet) and Chamounix (3396 feet). The maximum temperature on Mont Blanc occurred at 1h. 30m. p.m., and at the other stations at 1h. p.m., but at Geneva it occurred at 2h. 30m. p m. The mean temperature on Mont Blanc from July 18 to August 14 was 20°·5, and at Geneva 69°·8. The average decrease with height was therefore 1°·1 F. for each 100 metres (328 feet); the maximum decrease was 1°·3 at 3h. p.m., and the minimum nearly 1°·0 at 4h. a.m. The daily range of atmospheric pressure shows that notwithstanding the enormous height the double daily period still occurred. The author then discussed, with the aid of the Bavarian stations, the modifications to which the single daily barometric oscillation with increasing altitude is subject. The analysis shows that the amplitudes first decrease with height, and then increase, from about the height above sea at which the times of the phases begin to run in an opposite way to those at the surface of the earth. The influence of the daily variation of temperature in the strata of air below the mountain summit, is thoroughly discussed on the basis of these results. Dr. Hann points out that it is one of the most interesting results of barometric observations on high mountain peaks, that they show us that daily temperature oscillations in free air are much smaller than those shown by thermometers at stations, even those on the peaks. Meteorological science is much indebted to Dr. Hann for this valuable and laborious investigation.

TWO ways of producing "artificial glaciers" are described by K. R. Koch in *Wiedmann's Annalen*. The yellow kinds of pitch resembling colophony, which can be commercially obtained, exhibit the plasticity with regard to pressure, and brittleness with regard to tension, that ice possesses, or at least the surface layers do after some exposure to the air. Herr Koch takes a square tray provided with a slanting gutter, down which the pitch is allowed slowly to descend. To prevent its rolling down, the gutter is first lined with a layer of very hot pitch. As the mass descends, fissures are produced in the surface, which show a great resemblance to those observed in ice, though not so deep as the latter. Cracks proceed from the edges towards the middle at an angle of forty-five degrees to the edges, and join the transverse fissures in the centre. Where the bed widens, longitudinal crevices are produced. The black fissures show well in the brown surface. Another method is to coat the pitch with a layer of some white paint, when the cracks appear black on white. It can thus be easily shown that particular forms of cracks always appear at particular parts of the bed. The motion, sometimes uniformly progressive, sometimes pausing, and sometimes directed upwards, can be well studied with a microscope.

THOSE who have had occasion to measure an electric current by the deposition of silver on a platinum bowl as kathode, have probably occasionally noticed the very regular manner in which the silver is deposited in radial lines. This appearance is particularly noticeable on the sides of the bowl, and when a somewhat strong solution of silver nitrate is employed. Herr U. Behn has conducted an elaborate series of experiments with a view to ascertaining the cause of this regular deposition, and has examined the effect on the deposit produced by the concentration of the solution, the current density, and the potential difference between the anode and kathode. He finds that in the electrolysis of silver nitrate, the effect is best obtained with a concentrated solution of the salt, and when the current density at the kathode is small. An increase in the temperature of the voltameter is found to facilitate the formation of the ridges, while, on the other hand, the value of the electromotive force employed seems to exert no influence.

The author has succeeded in obtaining the same effect with solutions of copper sulphate, and finds that the chief condition which must in this case be fulfilled is that the current density should be small. The concentration of the solution affects the deposit in the same manner as with silver nitrate, though to a smaller extent. Much smaller ridges were obtained with solutions of lead acetate and of zinc sulphate. The author considers that the ridges are in all cases caused by the effect of convection currents set up in the electrolyte owing to the changes in concentration which go on in the liquid during the passage of the current. The paper in which these results are given is published in *Wiedemann*'s *Annalen* for January.

In the January number of *Zeitschrift für praktische Geologie* a brief historical account may be read of the Geological Survey Departments of Bavaria and of Alsace-Lorraine. Bavaria was the first among German States to found a Government Geological Survey. That was more than forty years ago, and ever since its commencement it has been under the able guidance of Oberberg Direktor von Gümbel. To his tireless zeal is largely due the enormous amount of work accomplished by the Survey. The mountains on the borderland of Bohemia and the Austrian Tyrol have been mapped in detail, Franconia was completed in 1891, and there still remain Rhenish Bavaria, the Danube districts, and certain parts in the north-west of Bavaria. The Alsace-Lorraine Survey, instituted in 1873 under the management of Profs. Benecke and Rosenbusch, was handicapped at its commencement by the want of detailed topographical maps. Rapid strides are now being made, and a series of geological sheets of Northern Lorraine have been published since 1887. The long southern strip of Alsace is scarcely begun. National rivalry makes itself felt along the French frontier. The German geologists complain that it is made practically impossible for them to carry their work over the frontier, whereas the French geologists have had the advantage of free access into Alsatian territory.

Modern geology entered on a new period of progress when it realised some of the results of horizontal rock movement. Heim, Lapworth, Bertrand, and others proved beyond dispute that rock masses could be displaced and carried many miles over the surfaces of underlying rock. A Swiss geologist has just proposed a movement of this kind, but on a gigantic scale, as an explanation of the Chablais mountains which extend on both sides of Lake Geneva. He imagines that the upper part of an immense fold of rock was carried from the districts *south* of Mont Blanc and Mont Rosa, to the *northern* slopes of the Alps, and that this movement was not limited to the Swiss areas, but could be traced eastwards at least into the Engadine. The Chablais mountains and fragmentary portions all along the northern edge of the Swiss and Bavarian highlands are thought to be the remaining traces of the carried rocks, and to be, in short, geologically misplaced mountains. Should this theory prove to be correct, it will be of the highest importance; at the same time, the evidence in its favour does not yet profess to be entirely conclusive. (*Arch. des Sc. Phys. et natur.*, December, 1893, Geneva, "Sur l'origine des Préalpes Romandes," by Hans Schardt.)

The statistics of the cases treated for hydrophobia during the month of November at the Pasteur Institute in Paris appear in the December number of the *Annales de l'Institut Pasteur*. No less than 129 persons underwent this treatment, and of these ninety-four were bitten by undoubtedly rabid animals, the remainder having been attacked by animals suspected of suffering from rabies at the time, but in which the actual proof of this being the case, such as a veterinary examination and communication of the disease to other animals, was wanting. Of these persons 109 were bitten by dogs, seventeen by cats, one by a horse, one by a sheep, and one by a pig. In October 127, in September 108, and in August 135 persons were treated for hydrophobia in Paris. The establishment of similar institutes in so many other parts of the world, naturally tends to reduce the number of foreigners attending the Pasteur Institute in Paris; last year's statistics, however, showed that England still furnished a considerable proportion of the strangers at the Institute, and this state of things is unfortunately likely to continue as long as we are obliged to depend upon other countries for the treatment of this terrible disease.

We published a few years ago a review of an elaborate work on the chemical and bacteriological examination of potable waters by Salazar and Newman; these authors have recently communicated a paper on the ice consumed in Valparaiso to the "Actes de la Société Scientifique du Chili," 1893. The inconsistency of people taking elaborate precautions to ensure the purity of their drinking water, whilst ice is used without any consideration of its source, is pointed out. In one of the samples examined, and taken from some of the ice supplied to the city, as many as 15,300 micro-organisms were found in a cubic centimetre of melted ice. Following in the footsteps of other investigators, the authors insist upon all ice used for consumption being prepared from water rendered above suspicion by being either previously distilled or passed through Chamberland filters.

A catalogue of meteorological, magnetic, and physical instruments has been received from E. A. Zschau, Hamburg.

The December number of Dr. Braithwaite's "British Moss Flora" has been received. It deals with Bryaceæ and Bartramiaceæ.

We have received several supplements to the Queensland Government Gazette, containing the statistics of meteorological observations made in Queensland during 1893.

The January number of the *Essex Review* contains an obituary notice of the late Mr. E. Charlesworth, and an article on technical instruction in Essex, by Mr. J. H. Nicholas.

By far the best description that we have seen of the Manchester Ship Canal, both as regards text and illustration, appears in *Engineering* for January 26. The work is traced from its beginning, eleven and a half years ago, and all the details of construction are dealt with in a very exhaustive manner.

We have received from Messrs. Williams and Norgate a work entitled "Descriptive Biography Columns," by Mr. Nasarvanji Jivanji Readymoney. The work is designed to receive records of the events that make up one's life, and is therefore similar to Mr. Galton's life-history album, with the addition of a few novel features.

The second edition of Clowes' and Coleman's "Quantitative Chemical Analysis" (J. and A. Churchill) has just appeared. The original edition was reviewed in these columns in April, 1892. Several important alterations and additions have since been made, thereby increasing the value of a book that has been found useful to both teachers and students.

Bulletin No. 41 of the Experimental Station of the Kansas State Agricultural College, Manhattan, is devoted to a report from the Botanical Department on the effect of fungicides on the germination of corn.

The *Monatsschrift für Kakteenkunde*, a monthly journal devoted entirely to the cultivation of *Cacti* and other succulent plants, has now entered on the fourth year of its existence. It is edited by Prof. Schumann, of Berlin, and published by Neumann, at Neudamm, in Brandenburg.

WE have received the *Agricultural Gazette of New South Wales* for October, 1893, containing, among other papers, an elaborate one by Mr. N. A. Cobb, on "Plant Diseases and their Remedies." The present instalment is entirely devoted to the very numerous diseases which attack the sugar-cane; copious illustrations are given of its animal and vegetable parasites.

MR. W. TRELEASE reprints, from the fifth annual Report of the Missouri Botanical Garden, an elaborate illustrated paper on sugar maples. He recognises ten species of *Acer* natives of the United States, and classifies them under five groups—the bush maples, vine maples, sycamore maples, soft maples, and hard or sugar maples. The sugar maples are *Acer grandidentatum, saccharum*, and *Floridanum*. Linnæus's *Acer saccharinum* is not a sugar maple at all, but is the silver maple belonging to the group of soft maples.

A NEW method of preparing phosphorus is described by Messrs. Rossel and Frank in the current issue of the *Berichte*. By the use of aluminium as reducing agent it is shown that phosphorus may be directly obtained from any mineral phosphate, and the method lends itself admirably to lecture-table demonstration. When ordinary microcosmic salt, hydrogen ammonium sodium phosphate, is fused in a porcelain crucible until it is converted into sodium metaphosphate, and aluminium turnings are dropped into the liquid, the flame of burning phosphorus at once appears. If the experiment is conducted in a glass tube in a slow current of dry hydrogen the phosphorus distils into the cooler part and without the formation of any phosphoretted hydrogen. The residue consists of alumina, sodium aluminate, and a phosphide of aluminium of the composition Al_3P_5. This latter substance may be isolated as a grey crystalline powder by leading phosphorus vapour over aluminium heated in a combustion tube; it is unchanged by further heating, but is decomposed by water with formation of aluminium hydrate, phosphoric acid, and phosphoretted hydrogen. In the preparation of phosphorus by the method above described it is consequently impossible to obtain more than thirty per cent. of the phosphorus contained in the mineral phosphate employed. But it is found that the phosphide is totally decomposed by heating with silica, and hence if the mineral phosphate is previously mixed with some form of silica the whole of the phosphorus is liberated, and the reaction proceeds in a regular and readily controllable manner. Bone meal, powdered phosphorite or fossil phosphate, magnesium pyrophosphate, calcium metaphosphate, or any ordinary available phosphate, may be employed. Care must be taken, however, not to employ superphosphates containing admixed calcium sulphate, such as are commonly obtained for agricultural purposes by treatment with sulphuric acid without separation of the sulphate, for the sulphate is suddenly decomposed by the aluminium when a certain temperature is attained, with explosive force. Superphosphates obtained by treatment with hydrochloric instead of sulphuric acid may be employed with perfect safety, as chlorides are not explosively decomposed by aluminium. The new mode of preparing phosphorus may be conveniently illustrated upon the lecture-table by placing in a combustion tube a yard long, traversed by a slow current of hydrogen, a mixture of two and a half parts of aluminium, six parts of sodium metaphosphate, obtained by heating microcosmic salt, and two parts of finely divided prepared silica, and heating until the reaction commences. This is notified by a sudden brilliant incandescence, and phosphorus is observed to rapidly condense in globules in the cooler portion of the tube, at the end nearest the draught-hole into which the escaping hydrogen is led.

AN interesting paper upon the interaction between oxygen and phosphoretted hydrogen is contributed to the *Zeitschrift für Physikalische Chemie* by Dr. Van de Stadt. It is shown that the two gases instantly combine, with the appearance of flame, when they are allowed to mix under diminished pressure. The combination occurs under these circumstances in the proportions of two volumes of hydrogen phosphide to three volumes of oxygen, the product being phosphorous acid. When, however, the oxygen is admitted very slowly, or the two gases are allowed to mix by diffusion under a pressure not exceeding 50 mm. equal volumes appear to react with production of a greenish flame, liberation of hydrogen, and formation of a crystalline deposit on the walls of the vessel. The crystals melt at about 80°, and appear to consist of the little-known metaphosphorous acid HPO_2; they are deliquescent, but after combination with sufficient water vapour to produce ordinary orthophosphorous acid the substance solidifies again. If the pressure is greater than 50 mm. both the meta and ortho acid are produced together with more or less free hydrogen. When the pressure is gradually reduced the gases combine at a certain low pressure with explosion. It is somewhat remarkable that the influence of moisture is directly opposite to that usually observed, for instead of facilitating the combination it greatly retards it.

NOTES from the Marine Biological Station, Plymouth.—Recent captures include two specimens of a small well-marked species of *Doris*, new to Britain, and probably to science. The tow-nets, on the other hand, have not yielded much of unusual interest lately, the chief contents being Copepods, *Sagitta*, Cirrhipede *Nauplii*, Polychæte larvæ, and Teleostean ova. The breeding season of a large number of both Fishes and Invertebrates has, however, recently commenced, including the Nemertine *Lineus obscurus*, the Polychæte *Phyllodoce*, the Mollusca *Purpura lapillus* and *Acanthodoris pilosa*, the Crustacea *Cravgon vulgaris* and *Eurynome aspera*, and the Ascidian *Botryllus violaceus*. The Anthozoa *Alcyonium digitatum* and *Cereus pedunculatus* are still breeding.

THE additions to the Zoological Society's Gardens during the past week include two Black-eared Marmosets (*Hapale penicillata*) from South-east Brazil, presented by Mrs. G. E. Russell; two Weka Rails (*Ocydromus australis*) from New Zealand, presented by the Hon. Lancelot Lowther; a Crossbill *Loxia curvirostra*) British, presented by Mr. W. S. Berridge; a King Snake (*Coluber getulus*) from Florida, presented by Mr. Lawson Reuss; a Rose-ringed Parrakeet (*Palæornis docilis*) from West Africa, presented by Mr. J. Hickman; a Ring-tailed Coati (*Nasua rufa*) from South America, deposited; two Abyssinian Guinea Fowls (*Numida ptilorhyncha*) from Somaliland, two Burrowing Owls (*Speotyto cunicularia*) from America, eight Undulated Grass Parrakeets (*Melopsittacus undulatus*) from Australia, purchased.

OUR ASTRONOMICAL COLUMN.

JUPITER'S SATELLITES IN 1664.—In the New York *Nation*, Mr. D. C. Gilman calls attention to an interesting letter of John Winthrop, written in 1664 to Sir Robert Moray. The letter is printed in the *Proceedings* of the Massachusetts Historical Society, June, 1878, and the following is an extract from it:—

"Havinge looked upon Jupiter with a Telescope, upon the 6th of August last, I saw 5 (?) Satellytes very distinctly about that Planet: I observed it with the best curiosity I could, taking very distinct notice of the number of them, by severall aspects with some convenient tyme of intermission; & though I was not without some consideration whether that fifth might not be some fixt star with which Jupiter might at that tyme be in neare conjunction, yet that consideration made me the more